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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/219,468	12/23/1998	PETER TREFONAS III	50351	4760
7590	04/15/2004		EXAMINER	
PETER F. CORLESS EDWARDS & ANGELL, LLP P.O. BOX 9169 BOSTON,, MA 02209			THORNTON, YVETTE C	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/219,468	TREFONAS ET AL.	
	Examiner	Art Unit	
	Yvette C. Thornton	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 17 November 2003.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 12 and 14-21 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 12 and 14-15, 17-21 is/are rejected.
- 7) Claim(s) 16 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

This is written in reference to application number 09/219468 filed on December 23, 1998

which was filed as a CPA on January 15, 2002 and a RCE on March 31, 2003.

Response to Amendment

1. Claims 1-11 and 13 have been cancelled. Claims 12 and 14-21 are currently pending.
2. The amendment to instant claim 16 is sufficient to overcome the rejection of the said claim under 35 USC 112.

Non-Complaint Amendment

3. The amendment filed on November 17, 2003 is **non-compliant** with 37 CFR 1.121.

The said amendment fails to contain claims 1-11 and 13 along with their proper identifiers.

The identifier of claim 16 is also incorrect. See MPEP 714.

4. Correction is promptly requested.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

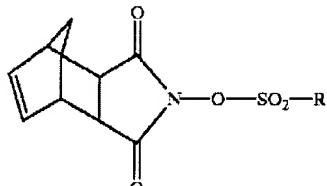
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 12, 14-15 and 17-21 rejected under 35 U.S.C. 102(e) as being anticipated by Trefonas, III et al. (US 6136501 A). Trefonas exemplifies a comparison polymer comprising isobornyl methacrylate, t-butyl methacrylate, methacrylic acid, methacrylonitrile and itaconic

anhydride (molar ratio 31:22:10:14:23) in example 8 (c. 15, l. 15-37). Trefonas further exemplifies (examples 9-21) inventive polymers comprising isobornyl methacrylate, X, methacrylic acid, methacrylonitrile and itaconic anhydride wherein X is selected from the group consisting of 1-methylcyclopentyl methacrylate, 2,3-dimethyl-2-butyl methacrylate, 3-methyl-3-pentyl methacrylate, 2,3,3-trimethyl-3-butyl methacrylate, 1,2-dimethyl-cyclopentyl methacrylate, 2,3,4-trimethyl-3-pentyl methacrylate and 2,23,4,4-pentamethyl-3-pentyl methacrylate (see Table 1; c. 15, l. 40-c. 16, l. 13). The said polymers were admixed with a photoacid generator norbornene dicarboximide perfluorooctanesulphonate (MDTPFOS), 1,8-diazabicyclo[5.4.0]undec-7-ene, SILWET 7604 and propylene glycol methyl ether acetate to form photoresist compositions (see ex. 22-36; table 2; c. 16, l. 15-c. 17, l. 18). In examples 37-51, the said compositions were spin-coated on top a silicon wafer having an organic antireflective film. The wafer was then baked, rapidly cooled to room temperature, exposed (193 nm), post-exposure baked and developed with TMAH to form a resist pattern (c. 17, l. 43-61).

It is the examiner's position that the taught polymers, including the comparative polymer all meet the limitations of a polymer that contains pendant photoacid labile moieties (i.e., t-butyl, isobornyl) and is completely free of aromatic groups. 1,8-diazabicyclo[5.4.0]undec-7-ene meets the limitation of an amine compound comprising a tertiary nitrogen alicyclic ring member. The examiner notes that the exemplified is disclosed in the instant specification as a preferred compound (see spec. pg. 8, l. 28). The taught silicon wafer meets the limitation of a microelectronic wafer substrate as set forth in instant claim 21.

Although Trefonas fails to exemplify a composition comprising a non-ionic acid generator, it does teach that preferred PAGs for imaging at 193 nm include imidosulfonates



such as compound of the formula: $\text{N}-[(\text{perfluoroctancesulfonyl})\text{-oxy}]\text{-5-norbornene-2,3-dicarboximide}$ (c. 11, l. 17-35). Specifically preferred is N-

[(perfluoroctancesulfonyl)-oxy]-5-norbornene-2,3-dicarboximide (c. 11, l. 17-35). One of ordinary skill would readily envision a resist composition such as those exemplified in the given examples comprising the specifically preferred compound N-[(perfluoroctancesulfonyl)-oxy]-5-norbornene-2,3-dicarboximide as the photoacid generator.

It is the examiner's position that N-[(perfluoroctancesulfonyl)-oxy]-5-norbornene-2,3-dicarboximide is a non-ionic photoacid generator.

7. The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Allowable Subject Matter

8. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: review of the prior art failed to teach a photoresist composition comprising a tertiary nitrogen alicyclic ring member which is substituted by two tertiary carbons and contains from about 6-24 non-hydrogen atoms.

Response to Arguments

10. In the remarks section of the amendment filed on November 17, 2003, applicants state that under separate cover, a rule 132 Declaration that show the cited disclosure of Trefonas has the same inventorship with the present application. The examiner has failed to find such a declaration in the present application. Absent such evidence and any further arguments, the rejection of record is maintained.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 571-272-1336. The examiner can normally be reached on Monday-Thursday from 8:00 am to 6:30 pm.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F. Huff, can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Yvette Clarke Thornton
Patent Examiner
Art Unit 1752

yct
April 13, 2004